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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/596,223

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Rifat A.M. Hikmet

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EXAMINER

CHIEN, LUCY P

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/596,223	<b>Applicant(s)</b> HIKMET ET AL.	
	<b>Examiner</b> LUCY P. CHIEN	<b>Art Unit</b> 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claim 1,4,7-11,13-15,** are rejected under 35 U.S.C. 102(b) as being anticipated by Marks (US 3653741)

#### *Regarding Claim 1,*

Marks discloses (column 3, rows 10-20) suspending a plurality of elongate particles (needles (column 3, rows 46-47) ) in a liquid ; applying a electric or magnetic field to the suspension to orientate the particles with parallel longitudinal axes; and solidifying the liquid to fix the orientation of the particles, thereby forming an optical integrator panel having a homogeneous distribution of elongate particles. (column 3, rows 10-20)

#### *Regarding Claim 4,*

Marks discloses (column 4, rows 26-31) wherein ratio between thickness and length of the elongate particles is in between 10 to 100 which is at least 1:10 (10).

#### *Regarding Claim 7,*

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Marks discloses (column 9, rows 56-65)) wherein the thickness of the elongate particles is in the range 5nm to 1  $\mu$ m and the length of the elongate particles is in the range 1  $\mu$ m to 50 $\mu$ m.

Regarding Claim 8.

Marks discloses wherein the liquid becomes a flexible transparent solid after solidification. (column 3, rows 10-20)

. Regarding Claim 9.

Marks discloses wherein the liquid comprises a polymerisable liquid, and the step of solidifying the liquid comprises polymerising the liquid.(column 9, rows 15-35)

Regarding Claim 10,11.

Marks discloses wherein the liquid comprises an organic material having a solidifying temperature (heating) is about 1 to 100°C which are overlapping ranges of the claimed temperature to be above 40°C, and the step of solidifying the liquid comprises cooling the liquid. (column 8, rows 20-25).

Regarding Claim 13.

Marks discloses wherein the suspension has a concentration of elongate particles by weight of less than 1%.(column 7, rows 40-45).

Regarding Claim 14.

Marks discloses the longitudinal axes of the elongate particles are orientated to be perpendicular to the substrates (Fig. 7, the particles are aligned normal to the surface)

Regarding Claim 15.

Marks discloses homogeneous distribution of elongate particles the optical integrator panel (abstract).

**Claim 16** is rejected under 35 U.S.C. 102(b) as being anticipated by Fujisawa et al (US 6002464)

Regarding Claim 16.

Fujisawa et al (Fig. 5) discloses an optical integrator panel (1,2,3) adapted to reduce the angular dependence of contrast of a liquid crystal display, the optical integrator panel being for placement in the path of reflected or transmitted light emitted by the liquid crystal display (23).

**Claim 1,15-20,22-25** are rejected under 35 U.S.C. 102(b) as being anticipated by Tsuyoshi (US 5995183).

Regarding Claim 16.

Tsuyoshi (Fig. 20) discloses an optical integrator panel (203) adapted to reduce the angular dependence of contrast of a liquid crystal display, the optical integrator

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panel (203) being for placement in the path of reflected or transmitted light emitted by the liquid crystal display (201).

Regarding Claim 1,15,17,23,25

Tsuyoshi (Fig. 1A, and Fig. 20) optical integrator panel comprising a solid transparent panel; and a plurality of elongate particles (11) homogeneously distributed and suspended in liquid in the panel (12), wherein the plurality of elongate particles are orientated with parallel longitudinal axes.

Regarding Claim 18,

Tsuyoshi (Fig. 20) discloses wherein the ratio between thickness and length of the elongate particles is 1 or more which 1:10 (10) is more than 1 therefore are overlapping ranges. In re Aller, 105 USPQ 233.

Regarding Claim 19,

Tsuyoshi (Fig. 20) discloses wherein the surfaces of the elongate particles are reflective (aluminum)(column 2, rows 12-15).

Regarding Claim 20,

Tsuyoshi (Table 1 located in column 9, rows 25-35)) wherein the thickness of the elongate particles of titanium oxide (1) is 0.13  $\mu\text{m}$  which is in the range 5nm to 1  $\mu\text{m}$  and the length of the elongate particles of titanium oxide (1) is 1.7  $\mu\text{m}$  which is in the range 1  $\mu\text{m}$  to 50 $\mu\text{m}$ . They are overlapping ranges. See. In re Aller, 105 USPQ 233.

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Regarding Claim 22,

Tsuyoshi (Fig. 7a) discloses the longitudinal axes of the elongate particles (scattering axis) are orientated to be perpendicular to the surfaces of the optical integrator panel (abstract).

Regarding Claim 24,

Tsuyoshi (Fig. 20) discloses wherein the optical integrator panel (203, detailed of 203 shown in Fig. 7a) is positioned adjacent one of two substrates (202,204) between which liquid crystals (201) are held.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**Claim 2,3** are rejected under 35 U.S.C. 103(a) as being unpatentable over Marks (US 3653741) in view of Fukaya (US 6731359)

Regarding Claim 2,

Marks discloses everything as disclosed above.

Marks does not disclose the step of bringing the suspension between two parallel substrates prior to the step of applying the electric or magnetic field.

Fukaya discloses (Fig. 1-Fig. 8) the diffuser layer (3) and the step of bringing the suspension (3) between two parallel substrates (42,72) prior to the step of applying the electric or magnetic field (happens at the last step shown in Fig. 7)

It would have been obvious to one of ordinary skill in the art to modify Marks to include Fukaya's method step of bringing the suspension (3, which is equivalent to Marks suspension of elongated particles in a liquid) between substrates prior to the step of applying the electric or magnetic field motivated by the desire complete a display to be able to apply the electric field across the display and to enhance the adhesion between the substrate (2) and the color layer (4) (column 2, rows 62-67).

Regarding Claim 3.

In addition to Marks and Fukaya as disclosed above, Fukaya discloses wherein the substrates (42,72) are coated with electrically conductive electrodes (15,5), and wherein at least one of the substrates and its respective electrode are at least partially transparent to ultraviolet light (5 is a transparent electrode).

**Claim 5,6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Marks (US 3653741) in view of Tu (US 20040081498)

Regarding Claim 5,6.

Marks discloses everything as disclosed above.

Marks does not disclose wherein the elongate particles comprise multiple layer dielectric materials which are reflective.

Tu discloses wherein the elongate particles comprise multiple layer dielectric materials [0020] such as a Bragg reflector (which has multiple layer dielectric materials) to provide high reflectivity and low absorption.

It would have been obvious to one of ordinary skill in the art to modify Marks to include Tu's elongated particles comprising multiple layer dielectric materials motivated by the desire provide high reflectivity and low absorption [0020].

**Claim 12,26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Marks (US 3653741) in view of Osborn et al (US 4221697)

Regarding Claim 12,26.

Marks discloses everything as disclosed above. Marks also discloses the elongated particles are aligned parallel to the surface. (Fig. 8)

Marks does not disclose wherein the polymerisable liquid comprises a metha(acrylate) monomer, an epoxy, a vinylether monomer or a thiolene system.

Osborn et al discloses wherein the polymerisable liquid comprises an epoxy.

It would have been obvious to one of ordinary skill in the art to modify Marks to include Osborn et al's epoxy motivated by the desire to provide a chemical reactive element to achieve grating or copolymerization (column 9, rows 45-50).

**Claim 21** is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuyoshi (US 5995183) in view of Fujisawa et al (US 6002464)

Regarding Claim 21.

Tsuyoshi discloses everything as disclosed above.

Tsuyoshi does not disclose a concentration of elongate particles by weight of less than 1%.

Fujisawa et al discloses a concentration of elongated particles by weight of less than 3% which less than 1% is less than the disclosed 3%. They are overlapping ranges see. In re Aller, 105 USPQ 233.

It would have been obvious to one of ordinary skill in the art to modify Tsuyoshi to include Fujisawa et al's concentration of elongated particles of less than 3% which discloses the less than 1% as claimed motivated by the desire to provide a light diffusing sheet that enlarges the viewing angle while preventing the image contrast from decreasing (column 2, rows 5-11).

**Conclusion**

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUCY P. CHIEN whose telephone number is (571)272-8579. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571)272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Lucy P Chien  
Examiner  
Art Unit 2871

/Dung Nguyen/  
Primary Examiner, Art Unit 2871